AMENDMENTS TO THE CLAIMS:

Please cancel claims 20 and 22, without prejudice. Kindly amend claims 1-10, 12-16, 21, and 23-26, as shown below.

This listing of claims will replace all prior versions and listings of claims in the Application:

Claim 1 (currently amended): Micro-hotplate device with integrated chemical sensor, which comprises:

a) a support substrate;

b) a ~~supported~~ membrane, supported by and attached to said support substrate, extending over a well in said support substrate;

c) an island attached to said membrane ~~so as to be~~ and electrically and thermally isolated from said substrate, said island ~~consisting~~ at least partly comprised of a semiconducting material;

d) at least one ~~or several~~ heating ~~elements~~ element integrated in said island;

e) at least one ~~or several~~ temperature-sensing ~~elements~~ element integrated in said island;

f) at least one ~~or several~~ active microelectronic ~~devices~~ device integrated in said island, ~~where~~ wherein said at least one of said at least one active microelectronic ~~devices~~ device is a chemical sensor whose chemically active layer is exposed to the ambient and which is based on a field-effect detection mechanism.

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Claim 2 (currently amended): A micro-hotplate device according to claim 1, wherein said at least one heating element ~~consists of~~ comprises a heating transistor.

Claim 3 (currently amended): A micro-hotplate device according to claim 1, wherein said at least one heating element ~~consists of~~ comprises a heating resistor.

Claim 4 (currently amended): A micro-hotplate device according to claim 1, wherein said at least one temperature-sensing element [[is]] comprises a temperature-sensitive resistor.

Claim 5 (currently amended): A micro-hotplate device according to claim 1, wherein said at least one temperature-sensing element [[is]] comprises a temperature-sensitive diode.

Claim 6 (currently amended): A micro-hotplate device according to claim 1, wherein said membrane ~~consists of~~ comprises at least one ~~or several~~ insulator ~~layers~~ layer.

Claim 7 (currently amended): A micro-hotplate device according to claim 6, wherein said at least one insulator [[is]] layer is comprised of silicon nitride.

Claim 8 (currently amended): A micro-hotplate device according to claim 6, comprising a plurality of insulator layers, wherein electrically conducting leads to the active microelectronic devices on the island ~~have been~~ are placed between ~~different~~ said insulator layers.

Claim 9 (currently amended): A micro-hotplate device according to claim 1, wherein the semiconducting material in the island [[is]] comprises silicon.

Claim 10 (currently amended): A micro-hotplate device according to claim 1, wherein the semiconducting material in the island [[is]] comprises silicon carbide.

Claim 11 (previously presented): A micro-hotplate device according to claim 1, wherein the support substrate and the island are made of the same material.

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Claim 12 (currently amended): A method for the fabrication of a micro-hotplate device ~~according to claim1~~ as claimed in claim 1, which comprises ~~characterized in the use of~~ a combination of masking steps and etching steps to define [[the]] a geometry of the device.

Claim 13 (currently amended): A method according to claim 12, ~~characterized in the use~~ said etching steps comprise a plurality of consecutive backside etching steps comprising:

a) depositing [[the]] a supporting membrane over [[the]] a silicon substrate;

b) a first ~~one~~ etching step ~~is used~~ to define [[the]] a thickness of the island by etching away [[the]] a region surrounding the island to a certain wanted depth, equal to ~~the wanted~~ a target thickness of the island; and

c) a second ~~another~~ etching step ~~is used to etch~~ for etching the island and surrounding region until the island is isolated from the support substrate.

Claim 14 (currently amended): A method according to claim 12, ~~characterized in the use of~~ wherein a silicon-on-insulator wafer is used as the substrate whereby [[the]] a buried insulator layer in said silicon-on-insulator wafer is used as an etch stop to define [[the]] a thickness of [[the]] an island of the device, resulting in a silicon island with an insulator layer on its backside.

Claim 15 (currently amended): A method according to claim 14, ~~characterized in the use of~~ and further comprising the following steps:

a) etching away from [[the]] a front side of the device [[the]] a region surrounding the island down to the buried insulator layer; and

b) etching away from [[the]] a back side of the device [[the]] silicon in [[the]] a region below the island and [[the]] a region surrounding the island until the buried

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insulator layer on the island is exposed and the island is attached to the support by the insulator layer.

Claim 16 (currently amended): A method according to claim 14, ~~characterized by~~ and further comprising the following steps:

a) oxidizing the silicon layer on [[the]] a front side of the device down to the buried insulator layer, except for [[the]] a region where the island should be;

b) etching away from [[the]] a front side of the device [[the]] oxide in [[the]] a region surrounding the island until the underlying silicon substrate is exposed; and

[[c]]c) etching away from [[the]] a back side of the device [[the]] silicon in [[the]] a region below the island until [[the]] a buried insulator layer on the island is exposed and the island is attached to the support by the remaining part of the insulator layer.

Claim 17 (previously presented): A method according to claim 12, wherein at least one of said etching steps is an anisotropic potassium hydroxide etching step.

Claim 18 (previously presented): A method according to claim 12, wherein at least one of said etching steps is an anisotropic tetramethyl ammonium hydroxide etching step.

Claim 19 (previously presented):) A method according to claim 12, wherein at least one of said etching steps is a deep reactive ion etching step.

Claim 20 (cancelled)

Claim 21 (currently amended): A micro-hotplate device according to claim 20, ~~wherein one or several field-effect chemical sensors are combined with one or several~~ and further comprising at least one chemical ~~sensors~~ sensor that ~~utilize~~ utilizes a detection mechanism different from [[the]] a ~~field-effect~~ field-effect detection mechanism.

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Claim 22 (cancelled)

Claim 23 (currently amended): A micro-hotplate device according to claim 21, ~~wherein one or several~~ comprising at least one field-effect detection gas ~~sensors are~~ sensor combined with at least one ~~or several~~ gas ~~sensors~~ sensor that ~~utilize~~ utilizes resistance ~~changes~~ change as a detection mechanism.

Claim 24 (currently amended): A micro-hotplate device according to claim 23, wherein said at least one ~~of the~~ gas ~~sensors~~ sensor that ~~utilize~~ utilizes resistance ~~changes~~ change as a detection mechanism is made of a semiconducting metal oxide.

Claim 25 (currently amended): A micro-hotplate device according to claim 23, wherein said at least one ~~of the~~ gas ~~sensors~~ sensor that ~~utilize~~ utilizes resistance ~~changes~~ change as a detection mechanism is made of a polymer.

Claim 26 (currently amended): A micro-hotplate device according to claim 1, wherein the support substrate ~~contains~~ comprises an array of several islands.

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